REMARKS

Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1-8 are currently being prosecuted. The Examiner is respectfully requested to reconsider her rejections in view of the amendments and remarks, as set forth below.

Rejection under 35 USC 103

Claims 1-4 stand rejected under 35 USC 103 as being obvious over STANLEY et al., U.S. Patent 3,909,358, in view of ODELL, U.S. Patent 4,532,212. This rejection is respectfully traversed.

The Examiner states that STANLEY et al. describes a process for preparing an enzyme by mixing a starting material with diatomaceous earth and treating with a sodium chloride solution. The Examiner agrees that STANLEY et al. does not show egg whites as a source of the lysozyme and that the specific techniques are not disclosed.

The Examiner relies on ODELL to teach egg whites as a source of lysozyme. The Examiner also points out purification techniques such as crystallization and resin techniques such as chromatographic separation. The Examiner feels it would have been obvious for one skilled in the art to use the egg white lysozyme source of ODELL in the STANLEY et al. process and then to purify

the enzyme using the crystallization or resin treatment disclosed by ODELL.

Applicant disagrees that the present claims are obvious over these two references. First, in the present invention, the lysozyme is adsorbed by the diatomaceous earth, kaolin or zeolite. These materials have an excellent and exclusive adsorption specific to lysozyme and the adsorbed lysozyme is easily eluted with a salt solution. This differs from STANLEY et al., which shows a method of preparing insolubilized enzymes by reacting an enzyme with chitin and glutaraldehyde. An insolubilized enzyme is in the immobilized form by entrapping an enzyme in polymerizing polyacrylamide or adsorbing an insoluble media (column 1, lines 10-12 and 22-25). Thus, STANLEY et al. requires both chitin and glutaraldehyde to immobilize an enzyme to form the insolubilized enzyme product termed "lactase-CG". The insolubilized enzyme is placed in a cylindrical vessel to perform a subsequent reaction with a solution of the substrate passing the enzyme column (column 1, lines 14-17). However, STANLEY et al. does not suggest a process for purifying and eluting lysozyme. In STANLEY et al., the enzyme is insolubilized and conjugated to both chitin and glutaraldehyde to be "lactase-CG" but is not eluted.

Further, column 5, lines 40-42 of STANLEY et al. notes that the "lactase-CG" is soaked in a salt solution such as 2N sodium chloride. This is used to remove unspecific and improved conjugates

to chitin and glutaraldehyde, which is well known in the art. This differs, however, from the salt solution of the present application, which is used to elute lysozyme. Thus, while STANLEY et al. teaches that the method for preparing insolubilized enzymes can be applied to lysozyme, there is no teaching or suggestion of purifying and eluting lysozyme.

Likewise, while ODELL teaches egg white as a source of lysozyme, there is no teaching or suggestion or purifying lysozyme from egg white by mixing the egg white solution with diatomaceous earth, kaolin, or zeolite, and then eluting the adsorbed lysozyme with a salt solution. Accordingly, Applicant submits that the present invention is not obvious over this combination of references.

Claim 1 specifically points out the step of eluting the lysozyme with the salt solution. Since neither of the references teaches a step of eluting, Applicant submits that this claim is allowable. Furthermore, claim 1 describes the lysozyme as being adsorbed by the diatomaceous earth, kaolin or zeolite. Accordingly, Applicant submits that claim 1 is allowable.

Claims 2-4 depend from claim 1 and, as such, are also considered to be allowable.

Claim 5 has been added, which is also dependent from claim 1. Claim 5 specifically includes that the egg white solution is adsorbed by the diatomaceous earth, kaolin or zeolite. Claim 1

refers to the adsorbed lysozyme in line 3, but claim 5 adds the specific adsorption step.

Claims 6-8 have been also been added, which are similar to claim 1, but in a different format. Thus, claim 6 now describes the step of the adsorbing of the solution by the mixture and the specific step of eluting the lysozyme with a salt solution. This claim is considered to be allowable for the same reasons recited above in regard to claim 1.

Claim 7 further recites the use of a sodium chloride solution. Claim 8 specifically points out that the lysozyme which is not adsorbed is not contaminated and recovered. This recovering material can be used in further food processing and is not ruined by contamination.

Applicant is also submitting herewith a copy of page 515 from a book entitled "Food Chemistry" which indicates that egg whites contain only 3.4% lysozyme. Thus, this helps to indicate the importance of the present invention in purifying lysozyme, since it occurs in such a small amount in egg whites.

Conclusion

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied upon by the Examiner, either alone or in combination. In view of this, reconsideration of

the rejections and allowance of all of the claims are respectfully requested.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application and the required fee of $60.00 is attached herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Pg. 512 of "Food Chemistry"